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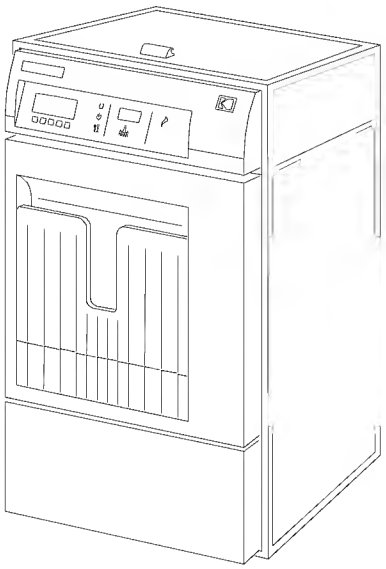
DIAGNOSTICS
for the
Kodak X-Omat 480 RA Processor



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CAUTION

This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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Error Codes

- Error codes are listed by order of priority on the Liquid Crystal Display.
- More than one error code can occur at one time.
- When 2 or more errors occur at the same time, only the highest priority error code will be shown on the display panel. The lower the error code number, the higher its priority.
- When the higher priority error/warning code is corrected, the next priority error/warning code will be displayed on the display panel.
- Error codes are divided into 3 categories: Fatal, Non-Fatal, and Warning.

Fatal Errors

If a sheet of film is moving through the processor when these errors occur, the sheet of film will exit from the processor; the processor will not accept any additional sheets of film; and a shutdown of the processor will occur.

If additional sheets of film are inserted into the processor when the first sheet of film is in transport, the additional sheets of film will exit from the processor; the processor will not accept any additional sheets of film; and a shutdown of the processor will occur.

If these errors occur while the processor is in standby, the processor will not accept any film. The user cannot correct the error. Move the MAIN CIRCUIT BREAKER, CB1, to the "O" position and call for service.

Non-fatal Errors

The processor will accept film and continue to operate, but the image quality may be reduced. The user should call for service.

Warning Errors

The processor can continue to operate. The error is a temporary condition or one which the operator can correct.

Circuit Board Identification

200 Circuit Board	Control Panel Circuit Board — The 200 Circuit Board is located below and to the left of the feed shelf. It provides visual output, by means of the indicator lights, of the current operating status of the processor. This Circuit Board also contains a 15 pin port for accessories such as the Portable Computer.
350 Circuit Board	Display Circuit Board — The 350 Circuit Board is located on the Dryer end of the processor. It provides a way for the operator to communicate with the Microprocessor Circuit Board. It also provides a visual status of the processor including any occurrences of errors.
500 Circuit Board	Microprocessor Circuit Board — The 500 Circuit Board is located inside the electrical box. It accepts and interprets input from the sensors, and controls the operation of all motors and solenoids.
5600 Circuit Board	Film Accumulator Circuit Board —The 5600 Circuit Board is located behind the feed tray. It senses film surface area and sends this information to the 500 Circuit Board.

Fatal Errors

Error Code	Error Description	Possible Malfunction	Action
E001	500 Circuit Board	500 CIRCUIT BOARD	Install a new 500 CIRCUIT BOARD. See the Service Manual, if necessary.
E002	Dryer Over Temperature	CONNECTORS on the DRYER THERMISTOR are loose, worn, or corroded.	• Seat or repair the CONNECTORS. • Install new CONNECTORS, if necessary.
		DRYER THERMISTOR is shorted.	Install a new DRYER THERMISTOR.
		RELAY U1 has shorted.	Install a new RELAY U1.
E003	Loss of 5600 Circuit Board Data Link	Communication is lost.	• Reset the processor: - Deenergize and then energize the processor, or - Press S502. • Check that the LIGHT SHIELD is installed. If necessary, see Modification No. 5 or the Service Manual.
		CONNECTORS P/J 5501, P/J 14, and P/J 508 are loose.	Check that CONNECTORS P/J 5501, P/J 14, and P/J 508 are clean and firmly seated.
		5600 CIRCUIT BOARD	• Install a new 5600 CIRCUIT BOARD • If the error remains, install a new 500 CIRCUIT BOARD.
E004	Inoperative Transport	FUSE F2 is open.	Install a new FUSE F2.
		Voltage at FUSE F2 is < 24 V dc.	Install a new QUAD POWER SUPPLY A1.
		Control voltage from the 500 CIRCUIT BOARD to the DC MOTOR CONTROLLER A2 is not existing during drive time.	Install a new 500 CIRCUIT BOARD.

Error Code	Error Description	Possible Malfunction	Action
E032	Developer Tank Fill	This error can occur during initial setup when the TANKS of the processor are filled with water. To prevent the error, add 3 ounces of developer concentrate to the DEVELOPER TANK before filling the processor with water.	
		LEVEL PROBES and CONNECTORS	• Clean LEVEL PROBES. • Check solution levels. • Clean and check connections at CONNECTORS P/J15 and P/J505.
		50/60 Hz SWITCH on the DEVELOPER REPLENISHER PUMP is not in the correct position.	Set the 50/60 Hz SWITCH in the correct position for power supplied.
		Solution level is low in the REPLENISHMENT TANK.	Mix new developer solution.
		HOSE has an obstruction.	Remove any HOSE obstructions between the REPLENISHMENT TANK and PUMP.
		DEVELOPER DRAIN VALVE is open.	Close the DEVELOPER DRAIN VALVE.
		DEVELOPER CHECK VALVE	Check that the DEVELOPER CHECK VALVE is **not** in the "Replenish Check" position.
		SOLID STATE RELAY U3 (Controls the DEVELOPER REPLENISHER PUMP.)	• Check for correct operation of SOLID STATE RELAY U3. • Install a new SOLID STATE RELAY U3, if necessary.
		500 CIRCUIT BOARD • Voltage at U3-3 and 4 is not 5 V during replenishment.	If the voltage is not correct, install a new 500 CIRCUIT BOARD.
		CONNECTORS P/J3 and P/J37 are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
		DEVELOPER REPLENISHER PUMP	• Check for correct operation of MOTOR B3. • Install a new DEVELOPER REPLENISHER PUMP, if necessary.
		POPPET VALVES in the DEVELOPER REPLENISHER PUMP	• Clean the POPPET VALVES. • Install new POPPET VALVES, if necessary.

Error Code	Error Description	Possible Malfunction	Action
E033	Fixer Tank Fill	This error can occur during initial setup when the TANKS of the processor are filled with water. To prevent the error, add 3 ounces of fixer concentrate to the FIXER TANK before filling the processor with water.	
		LEVEL PROBES and CONNECTORS	• Clean LEVEL PROBES. • Check solution levels. • Clean and check connections at CONNECTORS P/J15 and P/J505.
		50/60 Hz SWITCH on the FIXER REPLENISHER PUMP is not in the correct position.	Set the 50/60 Hz SWITCH in the correct position for power supplied.
		Fixer level	Mix new fixer solution.
		HOSE has an obstruction	Remove any HOSE obstructions between the REPLENISHMENT TANK and PUMP.
		FIXER DRAIN VALVE is open.	Close the FIXER DRAIN VALVE.
		FIXER CHECK VALVE	Check that the FIXER CHECK VALVE is not in the "Replenish Check" position.
		SOLID STATE RELAY U4 (Controls the FIXER REPLENISHER PUMP.)	• Check for correct operation of SOLID STATE RELAY U4. • Install a new SOLID STATE RELAY U4, if necessary.
		500 CIRCUIT BOARD • Voltage at U4-3 and 4 is not 5 V during replenishment.	If the voltage is not correct, install a new 500 CIRCUIT BOARD.
		CONNECTORS P/J3 and P/J37 are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
		FIXER REPLENISHER PUMP	• Check for correct operation of MOTOR B4. • Install a new FIXER REPLENISHER PUMP, if necessary.
		POPPET VALVES in the FIXER REPLENISHER PUMP	• Clean the POPPET VALVES. • Install new POPPET VALVES, if necessary.

Error Code	Error Description	Possible Malfunction	Action
E034	Unable to Determine Developer Temperature	DEVELOPER THERMISTOR R6: • is open or shorted • The resistance is not correct.	• Check the resistance at R6. See the Temperature/Resistance Table on page 22. • Install a new DEVELOPER THERMISTOR R6, if necessary.
		CONNECTORS P/J12 and P/J503 are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
		RECIRCULATION PUMP B5	Repair or install a new RECIRCULATION PUMP.
		DEVELOPER FILTER is dirty.	Install a new DEVELOPER FILTER.
		WASH TANK DRAIN is not draining.	Remove any obstructions from the WASH TANK DRAIN.
		500 CIRCUIT BOARD • A/D Conversion does not occur • Precision Resistor Test in the microprocessor fails	Install a new 500 CIRCUIT BOARD.
		See E037 and E038 for additional actions.	
E035	Unable to Determine Fixer Temperature	FIXER THERMISTOR R7: • is open or shorted • The resistance is not correct.	• Check the resistance at R7. See the Temperature/Resistance Table on page 22. • Install a new FIXER THERMISTOR R7, if necessary.
		CONNECTORS P/J13 and P/J503 are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
		RECIRCULATION PUMP B5	Repair or install a new RECIRCULATION PUMP.
		500 CIRCUIT BOARD • A/D Conversion does not occur • Precision Resistor Test in the microprocessor fails	Install a new 500 CIRCUIT BOARD.
		See E039 for additional actions.	

Error Code	Error Description	Possible Malfunction	Action
E036	Unable to Determine Dryer Temperature	DRYER THERMISTOR R5: • is open or shorted • The resistance is not correct.	• Check the resistance at R5. See the Temperature/Resistance Table on page 22. • Install a new DRYER THERMISTOR R5, if necessary.
		CONNECTORS P/J45, P/J17, and P/J503 are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
		500 CIRCUIT BOARD • A/D Conversion does not occur • Precision Resistor Test in the microprocessor fails	Install a new 500 CIRCUIT BOARD.
		See E040 for additional actions.	
E037	Loss of Developer Heating Ability	IMPORTANT: The DEVELOPER HEATER R3 has an internal OVERTEMPERATURE THERMOSTAT. When the HEATER becomes extremely hot, the THERMOSTAT opens. Wait for the HEATER to cool, allowing the THERMOSTAT to reset, before measuring resistance. The resistance for a normal HEATER is from 50 - 70 ohms across the HEATER ELEMENT and ∞ ohms to the HEATER SHELL.	
		• DEVELOPER HEATER R3: • is open or shorted • at 70°F (20°C), the resistance is not approximately 44 ohms.	Install a new DEVELOPER HEATER R3.
		AC side of SOLID STATE RELAY U2 is open.	Install a new SOLID STATE RELAY U2.
		CAUTION: The developer heating system has proportional control. The RELAY is turned on and off rapidly when the developer is near the set temperature.	
		The 500 CIRCUIT BOARD is not providing a 5 V dc signal to SOLID STATE RELAY U2-3 and 4.	Install a new 500 CIRCUIT BOARD. See the Service Manual, if necessary.
		DEVELOPER COOLING SOLENOID is off allowing water into the DEVELOPER HEAT EXCHANGER.	• Check CONNECTOR to SOLENOID L2. • If the CONNECTOR is operating correctly, install a new 500 CIRCUIT BOARD.
		A1 POWER SUPPLY is not providing 24 V dc to the L2 COIL.	Install a new A1 POWER SUPPLY.
		See E034 and E038 for additional actions.	

Error Code	Error Description	Possible Malfunction	Action
E038	Loss of Developer Cooling Ability	WASH TANK is empty or the water is too hot	Check: • SOLENOID L1 at the WASH WATER INPUT • QUICK DISCONNECT is connected. • The incoming water supply is supplying water. • The incoming water temperature is at least 5°F below the developer set temperature and is between 40° and 90°F (4° and 32°C).
		COOLING LOOP has an obstruction	Clean the COOLING LOOP in the DEVELOPER TANK.
		SOLENOID L2 has an obstruction	Disassemble and clean SOLENOID L2.
		DEVELOPER HEAT EXCHANGER COVER	Check for correct installation.
		WATER INLET SCREEN or INLET FILTERS at SOLENOID L1 have an obstruction	Clean the SCREEN and install new FILTERS, if necessary.
		DEVELOPER COOLING SOLENOID L2 COIL • resistance is not approximately 73 ohms	Install a new SOLENOID L2.
		See E034 and E037 for additional actions.	
E039	Loss of Fixer Heating Ability	IMPORTANT: The FIXER HEATER R4 has an internal OVERTEMPERATURE THERMOSTAT. When the HEATER becomes extremely hot, the THERMOSTAT opens. Wait for the HEATER to cool, allowing the THERMOSTAT to reset, before measuring resistance. The resistance for a normal HEATER is from 50 - 70 ohms across the HEATER ELEMENT and ∞ ohms to the HEATER SHELL.	
		• FIXER HEATER R4: • is open or shorted • at 70°F (20°C), the resistance is not approximately 36 ohms.	Install a new FIXER HEATER R4.
		AC side of SOLID STATE RELAY U5 is open.	Install a new SOLID STATE RELAY U5.
		500 CIRCUIT BOARD is not providing a 5 V dc signal to SOLID STATE RELAY U5-3 and 4.	Install a new 500 CIRCUIT BOARD. See the Service Manual, if necessary.
		See E035 for additional actions.	

Error Code	Error Description	Possible Malfunction	Action
E040	Inoperative Dryer	OVERTEMPERATURE THERMOSTAT	• Manually reset. • Determine the cause of the malfunction and make the repair.
		DRYER HEATERS R1 and/or R2: • are open or shorted • the resistance is not approximately 14 - 21 ohms.	Install new DRYER HEATERS R1 and/or R2.
		AC side of SOLID STATE RELAY U1 is open.	Install a new SOLID STATE RELAY U1.
		500 CIRCUIT BOARD is not providing a 5 V dc signal to SOLID STATE RELAY U5.	Install a new 500 CIRCUIT BOARD. See the Service Manual, if necessary.
		BLOWER DRIVE BELT	• Make any necessary adjustments. • Install a new BLOWER DRIVE BELT, if necessary.
		BLOWER MOTOR	Install a new BLOWER MOTOR, or repair the existing BLOWER MOTOR.
		See E036 for additional actions.	

Error Code	Error Description	Possible Malfunction	Action
E041	Loss of Transport Speed Control	After the processor is in the condition for 2 minutes, this error automatically increases to an E004 error condition.	
		FUSE F2 at the ELECTRICAL BOX is open.	• Find and repair the mechanical malfunction in the transport system. • Install a new FUSE F2.
		If the error continues, check within 20 seconds of startup or reset: • The red LED on the DC MOTOR CONTROLLER A2 is illuminated. • The voltage at TB10 on the DC MOTOR CONTROLLER A2 is 24 V dc. • The analog voltage to the MOTOR CONTROLLER A2 at TB20-6 and 4 is approximately the following. - Extended Speed (2.0 V dc) - Standard Speed (3.2 V dc) - Rapid Speed (4.2 V dc) - K/RA Speed (5.4 V dc) • Feedback pulses exist from the DC MOTOR CONTROLLER A2 to the 500 CIRCUIT BOARD.	
		DC DRIVE MOTOR B6	Install a new DC DRIVE MOTOR B6 if: • The red LED **is** illuminated. • 24 V dc **is** existing on TB10. • The control voltage **is** correct and the MOTOR is not operating.
		DC MOTOR CONTROLLER A2	Install a new DC MOTOR CONTROLLER A2 if: • The red LED **is not** illuminated. • 24 V dc **is** existing on TB10. • The control voltage **is** correct and the MOTOR is not operating.
		500 CIRCUIT BOARD	Install a new 500 CIRCUIT BOARD if: • The red LED **is** illuminated. • 24 V dc **is** existing on TB10. • The control voltage **is not** correct.
		NOTE: If the transport is running slower than the set speed, the microprocessor increases the control voltage approximately 25 mV every second at TB20-6 (+) and TB2-4 (-). At 6 V dc, the voltage is shut off. If this happens, check for mechanical malfunctions. If the voltage is 0, check the wiring and connector for opens. The voltage should be measured within 20 seconds after the cycle is selected. A shutdown of the microprocessor occurs if it thinks that the correct speed has not been attained.	
		LED CR19 on the 500 CIRCUIT BOARD is not pulsing.	Install a new 500 CIRCUIT BOARD.
		See E004 for additional actions.	

Error Code	Error Description	Possible Malfunction	Action
E042	Loss of the Accessory Data Link	CABLE connections are loose.	Check: • The CABLE connections between the FILM FEEDER and the processor. • The CABLE connections between the 200 CIRCUIT BOARD and the 500 CIRCUIT BOARD.
		500 CIRCUIT BOARD	Install a new 500 CIRCUIT BOARD.
E044	Display Random Access Memory	CONNECTORS between the 350 and 500 CIRCUIT BOARDS are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
		350 CIRCUIT BOARD	Install a new 350 CIRCUIT BOARD.
		500 CIRCUIT BOARD	Install a new 500 CIRCUIT BOARD.
E045	Display Communication Link	CONNECTORS between the 350 and 500 CIRCUIT BOARDS are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
		350 CIRCUIT BOARD	Install a new 350 CIRCUIT BOARD.
		500 CIRCUIT BOARD	Install a new 500 CIRCUIT BOARD.

Error Code	Error Description	Possible Malfunction	Action
E128	Cover Not in place	TOP COVER.	Check that the TOP COVER is installed and that the MAGNET is operating correctly.
		SWITCH S6	Check SWITCH S6. If necessary, install a new SWITCH.
		CONNECTORS P/J29, P/J15, and P/J505 are loose, worn, or corroded.	• Clean or repair the CONNECTORS. • Tighten the connections. • Install new CONNECTORS, if necessary.
E129	Tank Fill Mode	None	No action needed.
E130	Replenisher Pumps Disabled	None	Using the keypad, select either Automatic or Flooded Replenishment to enable the REPLENISHER PUMPS.
E132	Developer Under Set Temperature	None	• No action needed. • This error will clear automatically when the developer reaches the set-point temperature.
E133	Developer Over Set Temperature	None	• No action needed. • This error will clear automatically when the developer reaches the set-point temperature.
E134	Dryer Under Set Temperature	None	This error will clear automatically when the DRYER temperature reaches the set-point temperature.
E137	LED Error on the 5600 CIRCUIT BOARD	5600 CIRCUIT BOARD	• Check that no dirt is on the PROTECTIVE COVER for the 5600 CIRCUIT BOARD. • Reset the processor by deenergizing and then energizing it. • Check the 5600 CIRCUIT BOARD with the diagnostics for the portable computer. • Install a new 5600 CIRCUIT BOARD, if necessary.
E138	Invalid Film Accumulator Data	Software	Check that the software in the FILM ACCUMULATOR is compatible with the version of software on the 500 CIRCUIT BOARD. See the Service Bulletins and Newsletters.

Problem — Transport Failure

Film Feeding Action	**[1]**	Feed only one sheet of film at a time. Do not feed the next sheet of film until the film feed signal is received. If the film feed signal is not received, refer the difficulty to qualified personnel.
Replenishment Action	**[2]**	Check that the DRAIN VALVES are completely closed. Check that the PROCESSOR TANKS are full.
	[3]	Change any chemicals that were not mixed correctly, are exhausted, or are contaminated. When mixing fresh chemicals follow the recommendations below: • Mix a 2 week supply of DEVELOPER REPLENISHER. • Always use a SPLASH GUARD and RACK DRIP TRAY when removing the FIXER RACK from the processor to prevent contaminating the DEVELOPER. • Mix all chemicals and solutions as directed.
	[4]	Change the DEVELOPER FILTER if it is clogged or dirty.
	[5]	Check that the REPLENISHER RATES are set for correct replenishment.
	[6]	Fill the REPLENISHMENT TANKS if the solution levels are low.
Recirculation Action	**[7]**	Check for any obstruction to the ORIFICE in the DEVELOPER and the FIXER RECIRCULATION HOSES. Install a new DEVELOPER FILTER.
Rack and Crossover Action	**[8]**	Check that all RACKS and CROSSOVERS are in the correct position.
	[9]	If incoming wash water is dirty, clean the WASH RACK and WASH TANK thoroughly. • Clean any biological growth in the WASH TANK with a mild solution of chlorine bleach. Use 60 mL (2 fluid ounces) of bleach per 3.8 L (1 gallon) of water. Wipe the TANK with a soft sponge that will not cause scratches on the surface of the TANK.
	[10]	Check that the TURNAROUND ASSEMBLY is correctly adjusted and that the TURNAROUNDS are square with the RACK.

Roller Action	**[11]**	Check that all ROLLERS are correctly positioned and are rotating freely.
	[12]	Check that all ROLLER GEARS, SPROCKETS, and IDLERS are engaged.
	[13]	If any ROLLERS, especially the TURNAROUND ROLLERS, are broken or have worn GUDGEONS, remove the ROLLERS and install new ones.
	[14]	If any BEARINGS do not allow the TURNAROUND ROLLERS to rotate correctly, remove the BEARINGS and install new ones.
	[15]	Adjust the RACK CHAIN so that ROLLERS do not hesitate and the CHAIN does not jump. **Lower and raise the TURNAROUND ASSEMBLY squarely when making the adjustment.**
Dryer Action	**[16]**	Check that the DRYER DRIVE BELT is straight and is positioned on the center of the PULLEY.
	[17]	Check that the DRYER AIR TUBES are in the correct positions.
	[18]	Adjust the DRYER TEMPERATURE CONTROL SETTING to the **lowest** possible temperature that still allows good drying.
	[19]	Check that the EXHAUST FAN is operating.
Miscellaneous Action	**[20]**	Check that the TOP COVER and ACCESS PANELS are installed on the processor.
	[21]	Check that no light leakage occurs through the LIGHT-TIGHT GASKET.
	[22]	If experiencing problems when the solution temperature is low, check that the Temperature Lockout feature is disabled.

Problem — Surface Artifacts

Replenishment Action	**[1]**	Check that the REPLENISHER RATES are set for correct replenishment. Check that: • the TUBING of the REPLENISHMENT SYSTEM is straight • the PUMP is operating • the DETECTOR SWITCH is operating.
	[2]	Change any chemicals that were not mixed correctly, that are exhausted, or are contaminated. When mixing fresh chemicals follow the recommendations below. • Mix a 2 week supply of DEVELOPER REPLENISHER. • Always use a SPLASH GUARD and RACK DRIP TRAY when removing the FIXER RACK from the processor to prevent contaminating the DEVELOPER. • Mix all chemicals and solutions as directed.
	[3]	Fill the REPLENISHMENT TANKS if the solution levels are low.
	[4]	Change the DEVELOPER FILTER if it is clogged or dirty.
Rack and Crossover Action	**[5]**	If incoming wash water is dirty, clean the WASH RACK and WASH TANK thoroughly. • Clean any biological growth from the WASH TANK with a mild solution of chlorine bleach. Use 60 mL (2 fluid ounces) of bleach per 3.8 L (1 gallon) of water. Wipe the TANK with a soft sponge that will not cause scratches on the surface of the TANK.
Roller Action	**[6]**	Check that the surface of all the ROLLERS is clean and smooth, especially in the DEVELOPER TURNAROUND.
	[7]	Remove any buildup of debris from the DETECTOR ROLLERS.
	[8]	Check that all ROLLERS are correctly positioned and are rotating freely.
	[9]	Check that all ROLLER GEARS, SPROCKETS, and IDLERS are engaged.
	[10]	If any ROLLERS, especially the TURNAROUND ROLLERS, have broken or worn GUDGEONS, remove the ROLLERS and install new ones.
	[11]	If any BEARINGS do not allow the TURNAROUND ROLLERS to rotate correctly, remove the BEARINGS and install new ones.
	[12]	Adjust the RACK CHAIN so that ROLLERS do not hesitate and the CHAIN does not jump. **Lower and raise the TURNAROUND ASSEMBLY squarely when making the adjustment**

Dryer Action	**[13]**	Remove any dirt from the DRYER AIR TUBES and from within the SLOTS in the DRYER AIR TUBES. Use a BOTTLE BRUSH to clean the AIR TUBES. Rinse the AIR TUBES with water.
	[14]	Adjust the DRYER TEMPERATURE CONTROL SETTING to the **lowest** possible temperature that still allows good drying.
	[15]	Check that the EXHAUST FAN is either operating when the DRYER FAN cycles on, or operating continuously, depending on the setup at the time of installation.
	[16]	Check that the correct chemistry is used for processing film. • RA film: - RA or RP chemistry in the K/RA, Rapid and/or Standard speeds. • RP film: - RP chemistry **only** in Rapid, Standard, or Extended cycles.
Miscellaneous Action	**[17]**	Remove any buildup of debris from the FEED TRAY.
	[18]	Check that the correct films are being processed for the chemistry in use.

Problem — Abnormal Film Densities

Film Feeding Action	**[1]**	Feed only compatible films into the processor.
Replenishment Action	**[2]**	Change any chemicals that were not mixed correctly, that are exhausted, or are contaminated. When mixing fresh chemicals follow the recommendations below: • Mix a 2 week supply of DEVELOPER REPLENISHER. • Always use a SPLASH GUARD and RACK DRIP TRAY when removing the FIXER RACK to prevent contaminating the DEVELOPER. • Mix all chemicals and solutions as directed.
	[3]	Fill the REPLENISHMENT TANKS if solution levels are low.
	[4]	Change the DEVELOPER FILTER if it is clogged or dirty.
	[5]	Check that the REPLENISHER RATES are set for correct replenishment.
Recirculation Action	**[6]**	With the processor energized, check for movement of the solutions at the surface of the PROCESSOR TANKS. Movement indicates recirculation. If no movement is observed, check that: • no obstruction to the TUBING has occured in the RECIRCULATION SYSTEM • the PUMP is operating • the DEVELOPER FILTER is correctly positioned and has no obstructions.
	[7]	Check for any obstruction to the ORIFICE in the DEVELOPER and the FIXER RECIRCULATION HOSE.
	[8]	Install a new DEVELOPER FILTER.
Miscellaneous Action	**[9]**	***Check ambient water temperature. The water temperature must be between 4° and 32°C (40° and 90°F).***
	[10]	If using a SAFELIGHT, check that the correct BULB and SAFELIGHT FILTER are in the SAFELIGHT RECEPTACLE and at the correct distance from the FEED TRAY and work surface.
	[11]	Check that the TOP COVER and ACCESS PANELS are installed on the processor.
	[12]	Check that no light leakage occurs through the LIGHT-TIGHT GASKET.
	[13]	If the films are fogging, reduce the intensity of the Feed-End Display Panel.

Problem — Wet Films

Film Feeding Action	**[1]**	Feed only compatible films into the processor.
Replenishment Action	**[2]**	Change any chemicals that were not mixed correctly, are exhausted, or are contaminated. When mixing fresh chemicals follow the recommendations below: • Mix a 2 week supply of DEVELOPER REPLENISHER. • Always use a SPLASH GUARD and RACK DRIP TRAY when removing the FIXER RACK from the processor to prevent contaminating the DEVELOPER. • Mix all chemicals and solutions as directed.
	[3]	Fill the REPLENISHMENT TANKS if solution levels are low.
	[4]	Change the DEVELOPER FILTER if it is clogged or dirty.
	[5]	Check that the REPLENISHER RATES are set for correct replenishment.
Recirculation Action	**[6]**	With the processor energized, check for movement of the solutions at the surface of the PROCESSOR TANKS. Movement indicates recirculation. If no movement is observed, check the RECIRCULATION SYSTEM for any obstruction to the TUBING, PUMP failure, and DEVELOPER FILTER misplacement.
Dryer Action	**[7]**	Make sure that the DRYER AIR TUBES are in their correct positions.
	[8]	Remove any dirt from the DRYER AIR TUBES and from within the SLOTS in the DRYER AIR TUBES. Use a BOTTLE BRUSH to clean the AIR TUBES. Rinse the AIR TUBES with water.
	[9]	Adjust the DRYER TEMPERATURE CONTROL SETTING to the **lowest** possible temperature that still allows good drying.
	[10]	Check that the DRYER AIR EXHAUST is free from any obstruction and is installed according to specifications in the Installation Instructions.
	[11]	Check that the EXHAUST FAN is either operating when the DRYER FAN cycles on, or operating continuously, depending on the setup at the time of installation.
	[12]	Check that the DRYER OVER TEMPERATURE SWITCH is depressed.
	[13]	Check that the correct chemistry is used for processing film. • RA film: - RA or RP chemistry in the K/RA, Rapid and/or Standard speeds. • RP film: - RP chemistry **only** in Rapid, Standard, or Extended cycles.

Problem — Solution Levels

Replenishment Action

[1] Check that the REPLENISHER RATES are set for correct replenishment. Check that:

- no obstruction to the TUBING has occured in the REPLENISHMENT SYSTEM
- the REPLENISHER PUMPS are operating
- the ENTRANCE DETECTOR SWITCHES are operating.

[2] Change any chemicals that were not mixed correctly, are exhausted, or are contaminated.
When mixing fresh chemicals follow the recommendations below:

- Mix a 2 week supply of DEVELOPER REPLENISHER.
- Always use a SPLASH GUARD and RACK DRIP TRAY when removing the FIXER RACK from the processor to prevent contaminating the DEVELOPER.
- Mix all chemicals and solutions as directed.

[3] Fill the REPLENISHMENT TANKS if solution levels are low.

[4] Change the DEVELOPER FILTER if it is clogged or dirty.

[5] Check that the POPPET SEATS are not dirty or that distortion has not occured preventing correct replenishment. Have qualified personnel clean or replace them if necessary.

[6] Check that the LEVEL PROBES are clean and free from build-up.
Check that all TUBING and HOSES are free from any obstruction or air bubbles.

[7] Check that replenishment occurs when a sheet of 35 x 43 cm (14 x 17 in.) film has entered the processor.

Problem — Overlapping of Films

Replenishment Action	**[1]**	Change any chemicals that were not mixed correctly, are exhausted, or are contaminated. When mixing fresh chemicals follow the recommendations below: • Mix a 2 week supply of DEVELOPER REPLENISHER. • Always use a SPLASH GUARD and RACK DRIP TRAY when removing the FIXER RACK from the processor to prevent contaminating the DEVELOPER. • Mix all chemicals and solutions as directed.
	[2]	Fill the REPLENISHMENT TANKS if solution levels are low.
	[3]	Check that the REPLENISHER RATES are set for correct replenishment.
	[4]	Install a new DEVELOPER FILTER if it is clogged or dirty.
Recirculation Action	**[5]**	Check for obstructions to the ORIFICE in the DEVELOPER and the FIXER RECIRCULATION HOSES.
	[6]	Install a new DEVELOPER FILTER.
Rack and Crossover Action	**[7]**	Check that all RACKS and CROSSOVERS are in the correct position.
	[8]	Clean any biological growth from the WASH TANK with a mild solution of chlorine bleach. Use 2 fluid ounces (60 mL) of bleach per 1 gallon (3.8 L) of water. Wipe the WASH TANK with a soft sponge that will not cause scratches to the surface of the TANK.
	[9]	Check that the TURNAROUND ASSEMBLY is correctly adjusted and that the TURNAROUNDS are square with the RACK.
Dryer Action	**[10]**	Check that the DRYER DRIVE BELT is straight and positioned on the center of the PULLEY.
Miscellaneous Action	**[11]**	Check the time delay. For all transport speeds, the buzzer should sound when the film has advanced 3 inches into the processor.
	[12]	If the processor is used with a Multiloader 700 and the processor is operating in Extended Cycle, films may overlap. Make sure that the Multiloader 700 has 3.1 version of software; set JUMPER A9 on the A9 BOARD for ME3; and set the transport speed parameter of the processor to 28.

Thermistors

Temperature/ Resistance Table

Use the following table to check the operation of the DEVELOPER, FIXER, and DRYER THERMISTORS.

Temperature		Resistance Ohms	Temperature		Resistance Ohms
°C	°F		°C	°F	
10.0	50.0	19898.3	44.0	111.2	4543.9
12.0	53.6	18087.6	46.0	114.8	4200.8
14.0	57.2	16460.9	48.0	118.4	3889.5
16.0	60.8	14997.7	50.0	122.0	3603.1
18.0	64.4	13679.8	52.0	125.6	3340.6
20.0	68.0	12491.6	54.0	129.2	3099.6
22.0	71.6	11418.9	56.0	132.8	2878.5
24.0	75.2	10449.5	58.0	136.4	2675.2
25.0	77.0	10000.0	60.0	140.0	2488.2
26.0	78.8	9572.3	62.0	143.6	2316.1
28.0	82.4	8777.8	64.0	147.2	2157.4
30.0	86.0	8057.3	66.0	150.8	2011.2
32.0	89.6	7403.3	68.0	154.4	1876.2
34.0	93.2	6808.4	70.0	158.0	1751.7
35.0	95.0	6531.3	72.0	161.6	1636.3
36.0	96.8	6265.8	74.0	165.2	1529.8
38.0	100.4	5776.1	76.0	168.8	1430.9
40.0	104.0	5327.3	78.0	172.4	1339.7
42.0	107.6	4917.9	80.0	176.0	1255.1

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